

CLAIMS

What is claimed is:

1. A method for controlling an automatic transmission comprising the steps of:

(a) obtaining positioning data using a global positioning satellite (GPS);

(b) monitoring the automatic transmission to obtain transmission data;

(c) learning whether performance of the automatic transmission can be improved utilizing the positioning data and the transmission data; and

(d) adjusting a shift threshold for the automatic transmission for the positioning data if it is determined in step (c) that the performance of the automatic transmission can be improved.

2. The method of claim 1 further comprising the steps of:

(e) determining whether a one-time event has occurred; and

(f) ensuring that the automatic transmission is at a factory setting if the one-time event has occurred.

3. The method of claim 1 wherein the threshold-adjusting step (d) further includes the steps of:

(d1) determining whether a driving condition exists; and

(d2) determining a desired threshold for the automatic transmission based on the driving condition.

1 4. The method of claim 1 wherein the learning step (c) further includes the step
2 of:

3 (c1) determining that the performance can be improved if the automatic
4 transmission performs an unnecessary shift a particular number of times, the unnecessary
5 shift being a shift that occurs for a particular amount of time.

1 5. The method of claim 1 wherein the adjusting step (d) further includes the
2 steps of:

3 (d1) determining a particular shift threshold; and
4 (d2) adjusting the shift threshold by a portion of a difference between a current
5 shift threshold and the particular shift threshold each time it is determined in step (c) that the
6 performance of the automatic transmission can be improved.

1 6. The method of claim 1 further comprising the step of:

2 (e) storing a record of the positioning data and transmission data each time steps
3 (a) and (b) are performed.

1 7. The method of claim 6 further comprising the step of:

2 (f) removing the record if the positioning data in step (a) is not repeated for a
3 particular time.

1 8. The method of claim 1 wherein the monitoring step (b) further includes the
2 step of:

3 (b1) monitoring a load on the transmission.

1 9. The method of claim 8 wherein the learning step (c) further includes the step
2 of:

3 (c1) determining whether the load indicates that the automatic transmission is to
4 shift up or shift down and wherein the shift threshold adjusting step (d) includes the step of

5 (d1) adjusting the shift level up if the load indicates that the automatic
6 transmission is to shift up and adjusting the shift threshold down if the load indicates that the
7 automatic transmission is to shift down.

1 10. The method of claim 1 wherein the position obtaining step (a) further obtains
2 an altitude from the GPS and wherein the shift threshold adjusting step (d) further includes
3 the step of:

4 (d1) adjusting the shift threshold for the automatic transmission based on the
5 altitude.

1 11. A system for controlling an automatic transmission comprising:
2 a global positioning satellite (GPS) subsystem for obtaining positioning data using a
3 GPS satellite;

4 a transmission subsystem coupled the transmission and the GPS subsystem for
5 monitoring the automatic transmission to obtain transmission data, for learning whether
6 performance of the automatic transmission can be improved utilizing the positioning data
7 and the transmission data and for adjusting a shift threshold for the automatic transmission

8 for the positioning data if it is determined that the performance of the automatic transmission
9 can be improved.

1 12. The system of claim 11 wherein the transmission subsystem further
2 determines whether a one-time event has occurred and ensures that the automatic
3 transmission is at a factory setting if the one-time event has occurred.

1 13. The system of claim 11 wherein the transmission subsystem adjusts the
2 threshold by determining whether a driving condition exists and by determining a desired
3 threshold for the automatic transmission based on the driving condition.

1 14. The system of claim 11 wherein the transmission subsystem further adjusts
2 the shift threshold only if it is determined a particular number of times that the performance
3 of the automatic transmission can be improved.

1 15. The system of claim 11 wherein the transmission subsystem further adjusts
2 the shift threshold each time it is determined that the performance of the automatic
3 transmission can be improved.

1 16. The system of claim 11 further comprising:
2 a memory coupled to the transmission subsystem for storing a record of the
3 positioning data and transmission data.

1 17. The system of claim 16 wherein the transmission subsystem further removes
2 the record if the positioning data is not repeated for a particular time.

1 18. The system of claim 11 wherein the transmission subsystem monitors a load
2 on the transmission.

1 19. The system of claim 18 wherein the transmission subsystem determines
2 whether the load indicates that the automatic transmission is to shift up or shift down and
3 wherein the transmission subsystem further adjusts the shift level up if the load indicates that
4 the automatic transmission is to shift up and adjusts the shift threshold down if the load
5 indicates that the automatic transmission is to shift down.

1 20. The system of claim 11 wherein the GPS subsystem and the transmission
2 subsystem are integrated into the automatic transmission.

1 21. The system of claim 11 wherein the GPS subsystem is integrated into a GPS
2 navigation system.

1 22. The system of claim 21 wherein the automatic transmission includes a preset
2 shift threshold and wherein if the global positioning navigation system is off, the
3 transmission subsystem sets the shift threshold to the preset shift threshold.